



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
SOLID WASTE AND  
EMERGENCY RESPONSE

September 30, 2013

**MEMORANDUM**

**SUBJECT:** National Remedy Review Board Recommendations for the Ringwood Mines/Landfill Superfund Site

**FROM:** Amy R. Legare, Chair *Douglas C. Amman for Amy R. Legare*  
National Remedy Review Board

**TO:** Walter E. Mugdan, Director  
Emergency & Remedial Response Division  
U.S. EPA Region 2

**Purpose**

The National Remedy Review Board (the Board) has completed its review of the proposed cleanup action for the Ringwood Mines/Landfill Superfund site, in Borough of Ringwood, NJ. This memorandum documents the Board's advisory recommendations.

**Context for Board Review**

The Administrator established the Board as one of the October 1995 Superfund Administrative Reforms to help control response costs and promote consistent and cost-effective remedy decisions. The Board furthers these goals by providing a cross-regional, management-level, "real time" review of high cost proposed response actions prior to their being issued for public comment. The Board reviews all proposed cleanup actions that exceed its cost-based review criteria.

The Board review is intended to help control remedy costs and to promote both consistent and cost-effective decisions. Consistent with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), in addition to being protective, all remedies are to be cost-effective. The Board considers the nature of the site; risks posed by the site; regional, state, tribal and potentially responsible party (PRP) opinions on proposed actions; the quality and reasonableness of the cost estimates; and any other relevant factors or program guidance in making our advisory recommendations. The overall goal of the review is to ensure sound decision making consistent with current law, regulations, and guidance.

Generally, the Board makes the advisory recommendations to the appropriate regional division director. Then, the region will include these recommendations in the administrative record for the site, typically before it issues the proposed cleanup plan for public comment. While the region is expected to give the

Board's recommendations substantial weight, other important factors, such as subsequent public comment or technical analyses of response options, may influence the region's final remedy decision. The Board expects the regional division director to respond in writing to its recommendations within a reasonable period of time, noting in particular how the recommendations influenced the proposed cleanup decision, including any effect on the estimated cost of the action. Although the Board's recommendations are to be given substantial weight, the Board does not change the Agency's current delegations or alter the public's role in site decisions; the region has the final decision-making authority.

## **Overview of the Proposed Action**

EPA Region 2's proposed action is for the Ringwood Mines/Landfill Superfund Site's (site's) Operable Unit Two (OU2), which is located in the Borough of Ringwood, Passaic County, NJ. The approximately 500-acre site, located in a historic mining district, is approximately 1.5 miles long and 0.5 mile wide. The land comprising the site has been utilized for iron ore mining almost continuously from the mid-1700s to the early 1900s. In January 1965, the Ringwood Realty Corporation, a wholly owned subsidiary of the Ford Motor Company (Ford), purchased the mine area. Records indicate that, in 1967, Ringwood Realty began using the site to dispose of wastes generated at Ford's Mahwah, NJ, factory, including lead-based paint sludges. Ford directed its disposal contractor to dispose of its waste in two former iron mining pits (Peter's Mine Pit and Cannon Mine Pit), as well as a former mine tailing disposal area, now called the O'Connor Disposal Area. However, site investigations have also identified paint sludge along roadsides and on several residential properties located outside of these three disposal areas.

OU2 addresses contaminated soil and fill material in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal areas of the site. OU1 addressed the remedy selected in the site's 1988 Record of Decision (ROD), and OU3 is addressing site-related groundwater contamination. Removal authority is addressing site-related contamination located outside of the aforementioned site areas and on residential properties.

EPA Region 2's Peters Mine Pit Area's proposed action would provide for the installation of a permeable engineered cap over the Peters Mine Pit. Soil and fill material from the fill area surrounding the Peters Mine Pit would be excavated down to native soil or the water table, whichever is encountered first, and disposed of at an appropriately permitted off-site facility. To raise the Peters Mine Pit elevation to at least two feet above the average surface water elevation, EPA proposes to import and place clean fill within the Peters Mine Pit, and to fill the area surrounding the pit with clean soil. A geotextile fabric would be installed over the fill materials and the pit, and the surrounding area would be backfilled with clean fill and topsoil. This latter action would provide a minimum increase in elevation of approximately three feet around the perimeter area, and greater elevation towards the center of the cap, which would result in positive drainage away from the pit. The area would then be restored with vegetation, including trees naturally present in Ringwood.

The Cannon Mine Pit Area's proposed action calls for the installation of an impermeable engineered cap over the Cannon Mine Pit. Shallow fill materials located around the Cannon Mine Pit would be removed and placed within the pit. Pit fill material would then be compacted and clean fill material would be

placed within the pit to raise the grade as necessary to promote drainage off of the cap. A geosynthetic clay liner (GCL) would then be placed over the pit, followed by the placement of a soil cover to protect the liner and to allow vegetation to be established. Because the GCL is impermeable, a passive methane gas management system would need to be installed.

The proposed action for the O'Connor Disposal Area would provide for the excavation of all soil/fill material from the O'Connor Disposal Area down to the top of the underlying mine tailings, and disposal and/or recycling of all of the excavated material at appropriately permitted off-site disposal facilities. In addition, the layer of mine tailings located at the bottom of the O'Connor Disposal Area would be removed and potentially reused onsite within the Peters Mine Pit Area. Mine tailings not reused within the Peters Mine Pit Area would be disposed of at appropriately permitted off-site disposal facilities. Following the fill and tailings excavation and disposition, six inches of topsoil would be placed throughout the excavated area to enable re-vegetation of the O'Connor Disposal Area.

### **National Remedy Review Board Advisory Recommendations**

The Board reviewed the information package describing this proposal and discussed related issues with Region 2 staff Joe Gowers, Sal Badalamenti, and Doug Garbarini on June 25, 2013. Based on this review and discussion, the Board offers the following comments:

#### **Human Health Risk Assessment**

In the package provided to the Board, the cumulative risk assumptions at the site exceeded a hazard index (HI) of 1 at all three subsites. However, the Region also indicated that, through an apportionment risk assessment approach, risks to human health are acceptable.

Based on the presentation, the Board notes that removal actions have addressed much of the total site contamination, including removal actions taken since the site's relisting. The Board further notes that, typically, the remedy selection process, including risk assessment and alternatives analysis, takes into account the risk posed by site contamination and also considers actions taken to remove hazardous substances. The Board notes that, consistent with CERCLA, the NCP and existing guidance, removal actions that incrementally reduce risk at a site should be taken into account and, to the extent practical, contribute to the efficient performance of any anticipated long-term remedial action (e.g., CERCLA § 104 (a)(2) and §122(e)(6); 40 CFR § 300.415 (d) and §300.430(b); 53 Fed. Reg. at pp. 51424-5 (Dec. 21, 1988), 55 Fed. Reg. at p. 8707 (March 8, 1990). The Board recommends the Region's decision documents explain the relative role of removal actions (past, ongoing, and potentially future if more paint sludges, for example, are discovered) in reducing site risk. Further, the Board recommends that the Region integrate their risk reduction into the remedy selection process for this final remediation step.

The Board recommends that the decision documents explain how the Region's approach to assessing and addressing this site's risk is consistent with CERCLA, the NCP and existing guidance (e.g., CERCLA § 121 (d)(1); 40 CFR § 300.430 (e)(2)(i)(A); EPA/540/1-89/002, December 1989, *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)*). In addition, the Board recommends that the Region explain in the decision documents what risk reductions each of

the preferred alternatives would achieve and the rationale for not preferring what appear to be equally protective and less expensive alternatives, especially for the O'Connor disposal area. The Board further recommends that the decision documents explain how the Region's approach (in particular with regard to hazard indices greater than 1) is consistent with provisions in the NCP and existing guidance regarding protectiveness of human health and unacceptable risk (e.g., 40 CFR § 300.430(e)(9)(iii)(A); Office of Solid Waste and Emergency Response (OSWER) Directive No. 9355.0-30, April 1991 *Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions*; OSWER Directive No. 9355.0-69, August 1997, *Rules of Thumb for Superfund Remedy Selection*).

The package provided by the Region states that separate baseline human health risk assessments (HHRAs) for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the site have been completed. These studies incorporate unique, site-specific exposure characterizations addressing traditional and cultural uses of site plants and animals. The Board recommends that the Region's decision documents describe the underlying rationale for use of these particular exposure scenarios and parameters, as opposed to the more conventional approaches discussed in the 1989 risk assessment guidance.

### **Applicable or Relevant and Appropriate Requirements**

In the package provided to the Board, the applicable or relevant and appropriate requirements (ARAR) tables include references to executive orders and OSHA regulations. The Board notes that, while these are important considerations, they do not represent the kind of promulgated, enforceable and generally applicable (or waiveable) regulations or standards generally qualifying as ARARs. In addition, the citations should be more specific; therefore, the Board recommends that the Region refer to EPA/540/G-89/006, August 1988, *CERCLA Compliance with Other Laws Manual: Interim Final*. Furthermore, the Board recommends that the Region review the ARARs tables and consult the site attorney for assistance. Finally, the Board recommends that the Region explain in the decision documents how the preferred alternative will be protective and ARAR-compliant.

### **Remedial Action Objectives**

In the materials provided to the Board, the Region's preferred approach for all three subsites included remedial action objectives (RAOs) and remedial actions addressing groundwater at this site. For example, the RAOs included "protect groundwater," and the preferred alternatives included institutional controls (e.g., Classification Exception Areas) and/or monitoring of contaminated groundwater depending on the subsite. The Region also indicated it currently is developing a separate operable unit to specifically address site groundwater contamination. The Board recommends that the Region's decision documents clearly explain the role of monitoring in the Region's preferred approach and provide a clear measurable RAO and associated cleanup levels for this particular OU's response action. Further, the Board recommends that site decision documents contain a discussion regarding this OU's RAOs and exactly how they need to be modified to clarify the remedial action's intended objective.

## **Remedy Performance**

The preferred remedies for the Peters and Cannon Mine Pit areas utilize caps (permeable and impermeable). The information presented to the Board identified historic and ongoing subsidence as a site problem. The Board recommends that the Region further evaluate (for the Peters Mine in particular) and present in the decision documents, the subsidence causes and locations; the degree/amount of expected future subsidence; and a consideration of the subsidence's effect on the caps' long-term practicality and cost effectiveness.

In the package presented to the Board, the Region did not indicate how the preferred remedy would address paint sludge materials or drums if encountered. The Board recommends that the Region include in the decision documents how the preferred alternative will address paint sludge materials and drums if encountered during remedial design and remedial action.

## **Alternative Remedy**

In the package provided to the Board, the preferred remedy's nine criteria evaluation for the O'Connor Disposal Area appears to be equally-protective, but significantly more expensive than any of the other evaluated alternatives. The Board recommends that the Region's decision documents contain a more thorough explanation as to why alternative 5A provides the best balance of tradeoffs when compared to alternatives 4A or 4B.

The Region's proposed Peters Mine Pit remedy, as presented to the Board, includes, among other components, the excavation and off-site disposal of the historic fill material located above the water table in the "collar" area of the pit. This fill material, based on the package description, appears to be similar to the approximately 100,000 cubic yards of fill and debris already found below the water table within the pit. The Region estimates this fill material's excavation and removal cost to be \$2 million. The State of New Jersey commented that this historic fill could be segregated from hazardous materials and, subsequently, used as backfill within the pit. Therefore, the Board recommends that the Region's decision documents provide further justification for this fill material's off-site disposal rather than its consolidation within the Peters Mine Pit like other materials (e.g., mine tailings) proposed for on-site disposal/consolidation.

As presented to the Board, the Region has modified its preferred Peters Mine Pit remedy since the feasibility study to provide for the installation of a permeable, rather than impermeable, cap. However, the Region's preferred Cannon Mine Pit remedy is a GCL impermeable cap. The groundwater contaminant data discussed during the review suggest that Peters Mine Pit has consistent arsenic and benzene detection above their respective maximum contaminant levels (MCLs), whereas the Cannon Mine Pit groundwater contaminants occur at limited, sporadic detections at levels below MCLs. Furthermore, the Region stated that the site area's average rainfall is on the order of 40 inches/year. Finally, the State of New Jersey appears to support a vegetated soil covering/cap for the Cannon Mine Pit. Therefore, the Board recommends that the decision documents contain a more fully developed rationale for these two mine pit areas' different capping approaches.

## Conclusion

We commend the Region's collaborative efforts in working with the Board and stakeholder groups at this site. We request that a draft response to these recommendations be included with the draft proposed plan when it is forwarded to the Office of Superfund Remediation and Technology Innovation's Site Assessment and Remedy Decisions (SARD) branch for review. The SARD branch will work with both your staff and the Board to resolve any remaining issues prior to your release of the record of decision. This memo will be posted to the Board's website (<http://www.epa.gov/superfund/programs/nrrb>) within 30 calendar days of my signature. Once your response is final and made part of the site's administrative record your response will also be posted on the Board's website.

Thank you for your support and the support of your managers and staff in preparing for this review. Please call me at (703) 347-0124 should you have any questions.

cc: J. Woolford (OSRTI)  
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